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REMARKS

Claims 1-27 are pending in the present application. By this Response, claims 8, 22 and 26 are amended for clarification by clarifying that configuring the component without the previously stored configuration information is performed when the component was not previously in the location. No new matter has been added by the amendments to claims 8, 22 and 26. Reconsideration of the claims is respectfully requested.

Amendments are made to the specification to update the cross-reference U.S. Patent Application information on pages 1-2 of the specification. No new matter has been added by any of the amendments to the specification.

I. Telephone Interview

Applicants thank Examiner Patel and his supervisor for the courtesies extended to Applicants' representative during the June 7, 2004 telephone interview. During the interview, Applicants' representative discussed the distinctions of the present claims over the cited art. Specifically, Applicants' representative asserted that the Pelissier reference merely teaches network discovery and does not teach, responsive to a power cycle, obtaining current configuration information from the set of components, comparing the current configuration information with stored configuration information to form a comparison, or updating the stored configuration information if a difference is present in the comparison. As with the related cases, 09/692,354 and 09/692,352, discussed during the telephone interview, rather than examining the claims for the specific features recited therein, the Examiner is rejecting a generalization of the claims with general concepts of the cited prior art. Applicants respectfully request that the Examiner examine every limitation of the claims rather than mere generalizations. The substance of the interview is summarized in the following remarks.

II. Objection to Specification

The Office Action objects to the specification stating that the information for the cross-reference patent applications needs to be updated. By this Response, the specification is amended to provide the current status of the cross-reference patent applications including their serial numbers. Accordingly, Applicants request withdrawal of the objection to the specification.

III. 35 U.S.C. § 102, Alleged Anticipation

The Office Action rejects claims 1-10 and 15-27 under 35 U.S.C. § 102(e) as being allegedly anticipated by Pelissier et al. (U.S. Patent No. 6,496,503). This rejection is respectfully traversed.

As to independent claim 1, the Office Action states:

> **Referring to claim 1,**
> The reference Pelissier teaches a method in a network computing system for managing configuration information for a set of components in a network computing system, the method comprising: storing the configuration information for the set of components in the network computing system to form stored configuration information; responsive to a power cycle, obtaining current configuration information from the set of components; (col. 4, lines 23-44), comparing the current configuration information with the stored configuration information to form a comparison; updating the stored configuration information if a difference is present in the comparison. (Fig. 4, col. 8, lines 46-67 and col. 9, lines 1-58).

Office Action dated March 17, 2004, pages 2-3.

A prior art reference anticipates the claimed invention under 35 U.S.C. § 102 only if every element of a claimed invention is identically shown in that single reference, arranged as they are in the claims. *In re Bond*, 910 F.2d 831, 832, 15 U.S.P.Q.2d 1566, 1567 (Fed. Cir. 1990). All limitations of the claimed invention must be considered when determining patentability. *In re Lowry*, 32 F.3d 1579, 1582, 32 U.S.P.Q.2d 1031, 1034

(Fed. Cir. 1994). Anticipation focuses on whether a claim reads on the product or process a prior art reference discloses, not on what the reference broadly teaches. *Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 218 U.S.P.Q. 781 (Fed. Cir. 1983). Applicants respectfully submit that Pelissier does not identically show every element of the claimed invention arranged as they are in the claims. Specifically, Pelissier does not teach obtaining current configuration information from a set of components in a network computing system in response to a power cycle, comparing the current configuration information with stored configuration information to form a comparison, or updating stored configuration information if a difference is present in the comparison.

Pelissier teaches a system for device initialization and operation using directed routing. With the system of Pelissier, devices in the network power-up without individual addresses assigned to them and without forwarding databases. Each device is not responsible for learning the topology of the network or generating its own forwarding database. Rather, a central network manager discovers the topology of the network, assigning addresses to each device, generating forwarding databases for each device, and then initializing each device by providing the assigned address and the forwarding database to each device for storage.

In order to perform these functions, the system of Pelissier routes management cells through a network or fabric whose configuration is unknown (column 2, lines 57-61). These management cells are routed through an unconfigured or partially configured network using explicit routing to initialize or configure each device. After the devices in the network have been configured, subsequent cells can be routed through the newly configured devices using the more efficient destination address routing technique because each device would now have a forwarding database.

The management cell includes a destination address that identifies a permissive address, i.e. a global address that is interpreted by devices in the network as being explicitly addressed to that device (column 3, lines 30-36). When a switch receives a management cell with a permissive address, the switch examines several variables to determine the next hop of an explicit route (column 3, lines 48-54). The explicit route is an explicit list of port numbers that the cell is to traverse during the explicit phase of its transition through the network (column 5, lines 55-58). The determination of the next hop, with regard to a

permissive address being in the destination address of the management cell, involves identifying the port number associated with the switch manager or the switch that received the management cell (column 7, lines1-12). The management cell includes two arrays, IPATH() and RPATH() which store port numbers associated with the hops that the cell encounters during its outbound and return paths (column 7, lines 59-64). It is these arrays that permit the network manager to discover the topology of the network.

Nowhere in Pelissier is there any teaching that, responsive to a power cycle, current configuration information from a set of components in a network computing system is obtained and compared to stored configuration information to determine if there are differences and, if there are, the stored configuration information is updated. To the contrary, Pelissier merely teaches sending out management cells which compile lists of port numbers for switches through which the management cells are routed in both an outbound and return path. There is no comparison of these port numbers to anything. The only comparison even mentioned in Pelissier is the comparison of a hop pointer to a hop count to determine if a cell has reached the end of an explicit route (column 11, lines 17-19). This does not compare current configuration information for a set of components in a network computing system to stored configuration information of the set of components. It is merely a comparison of a hop count to a maximum number of hops value.

The Office Action alleges that Pelissier teaches the features of claim 1 at column 4, lines 23-44, column 8, lines 46-67, column 9, lines 1-58 and in Figure 4. Column 4, lines 23-44 reads as follows:

> A central network manager 150 is connected to switch 110 via link 122 for learning the network topology and calculating the forwarding databases for each switch, initializing or configuring each of the switches including loading or assigning their MAC addresses and loading their forwarding databases, detecting and managing faults or link failures in the network and performing other network management functions. Central network manager 150 could be provided as a separate device that is connected to one or more switches, could be included in a switch or could a be a software application that runs on one of the computers or end stations. Alternatively, one or more of these management functions can be performed in a distributed manner by a plurality (or all) of the switches, but this would require each switch to include greater processing capacity. For example, rather than having a central network manager 150 calculate

and download forwarding databases for each switch, each switch can separately learn the topology of the network and generate its own forwarding database. Central network manager 150 may also be referred to as a fabric manager because it manages the various switches and links within the fabric.

This section of Pelissier merely teaches a central network manager that learns the network topology and initializes or configures each of the switches by assigning their MAC addresses and loading their forwarding databases. Nothing in this section of Pelissier teaches any comparison of current configuration information obtained, in response to a power cycle, to stored configuration information for a set of components of a network computing system. Nothing in this section of Pelissier teaches anything regarding updating stored configuration information for a set of components of a network computing system if a difference is found in a comparison of current configuration information with stored configuration information.

Column 8, lines 46-67 of Pelissier reads as follows:

FIG. 4 illustrates an example cell format according to an embodiment of the present invention. There may be at least two types of cells routed through a network, both of which may be routed using either explicit routing or destination address routing. There are data cells which are standard cells carrying data directed to a particular destination device or computer. There are also management cells which are typically sent from the central network manager 150 for performing any of several network management functions (e.g., device initialization, topology discovery). A management cell can be used to query or update data objects in a targeted device. A data object is a group or collection of data in the device which may be accessed as a unit, such as a forwarding database or a MAC address for the device. FIG. 4 illustrates an example of a cell that could be used for either a data cell or a management cell.

Referring to FIG. 4, the example cell 400 includes a Hop Pointer (HP) 402, a Hop Count (HC) 404, a Direction field 406, a DA field 414, SA field 420, a SMAC field 422, a DMAC field 424, an IPath( ) field 436 and an RPath( ) field 438, which are described above. Fields 418 and 432 are reserved.

This section of Pelissier merely teaches that a cell may include a Hop Pointer, a Hop Count, a direction field, a destination address field, a source address field, a source MAC field, a destination MAC field, an IPATH() array, and a RPATH() array. Nothing

in this section of Pelissier teaches anything regarding a comparison of current configuration information obtained, in response to a power cycle, to stored configuration information for a set of components of a network computing system. Nothing in this section of Pelissier teaches anything regarding updating stored configuration information for a set of components of a network computing system if a difference is found in a comparison of current configuration information with stored configuration information.

As discussed above, the Hop pointer is merely a maximum number of hops. The hop count is the current number of hops the cell has traversed in the path. The direction field merely identifies inbound or outbound. The destination address identifies either a specific device address or a permissive address, as discussed above. The source address identifies the source of the management cell and the SMAC and DMAC fields identify the MAC addresses of the source and destination. As mentioned above, the IPATH() and RPATH() arrays identify the port numbers encountered by the cell in its outbound and return paths. Thus, nothing in the description of these fields teaches anything regarding the features of claim 1 of the present application.

Column 9, lines 1-58 of Pelissier read as follows:

> The example cell 400 includes a Version field 408 which identifies a version of the software being used, a command (CMD) field 410 which describes a command or operation that is being performed (e.g., for management cells), a Data field 434 for providing data and a Command Class (CMD CLASS) field 416 which identifies the class for the command. Examples of commands include Get( ) and Set( ). The Get( ) command can be used to read or query a data object from devices, while Set( ) can be used to update a data object in a device.
>
> Cell 400 also includes a Common Object Descriptor (COD) 428 which identifies the data object which will be operated on in the target device as specified by the command. Thus, the COD identifies the collection of data (i.e., the data object) which will be queried or updated in the target device. COD examples include a MAC_address (specifying the address of the device), a DevGUID (the globally unique identifier that identifies the device), NumPorts (indicating the number of ports in the device), DevType (indicating the device type, such as switch) and the FDB (the device's forwarding database). All of this information is stored in a device or switched and may be queried or updated by specifying the object using the appropriate COD. Some data objects in a device, such as the device's MAC address and the forwarding database, can be both read (queried) or updated (written to). While other data objects (such as the

device's globally unique identifier or GUID) may be a read-only object. According to an embodiment of the invention, the MAC address of the device and the forwarding database of a device can be set or updated only by the central network manager 150. The new data used to update or initialize a data object in a target device is provided in the Data field 434.

The central network manager 150 can read (or query) a device's address by specifying the Get( ) command and the MAC_address COD in a management cell, or can update or initialize a device's MAC address by specifying the Set( ) command and the MAC_address COD in the cell (providing the new MAC address for the device in the Data field 434). Likewise, a central network manager 150 can read or query a device's forwarding database using the Get( ) command and specifying the FDB COD, and update or initialize a device's forwarding database using the Set( ) command and the FDB COD (providing the updated forwarding database in the Data field 434 of the management cell). A wide variety of commands and CODs may be used to perform many types of management functions on different data objects in a device. Some examples have been described above, but the present invention is not limited to these examples.

Where a data object includes several entries, a COD index (COD_IDX) field 426 can be used to index to a specific entry within the data object. An example is a forwarding database which specifies a port number for each of a plurality of destination addresses. Thus, using the FDB COD and a specific number for the COD_IDX, the central network manager 150 can query or update a single entry in a device's forwarding database.

Cell 400 also includes a Stamp field 412. The Stamp is a unique identifier used in management cells that is used by a requester. A cell sent as a response or a reply to an initial management cell will contain the same stamp as the initial cell. In this manner, the Stamp identifies the initial management cell from the central network manager 150 or initiating device and the corresponding reply cell returned to the central network manager 150 or the initiating device. FIG. 4 illustrates only one example of a cell format, and the present invention can be practiced with cells having a variety of formats and fields.
(emphasis added)

The pertinent parts of this section of Pelissier merely teach that the central network manager may set the MAC address or query the MAC address of a device and that an entry in a device's forwarding database may be queried or updated by the central network manager. However, there is no teaching or even mention of any comparisons in this, or any other, section of Pelissier. Pelissier never compares current configutation information for a set of components of a network computing system to stored

configuration information for the set of components in order to determine if there are any differences and, if so, update the stored configuration information. Pelissier uses a management cell to compile a list of port numbers as it is routed through a directed path. Pelissier does not perform any comparisons or updates based on the results of any comparisons.

Figure 4 of Pelissier merely illustrates the cell discussed above. The illustration in Figure 4 is merely a plurality of boxes labeled with the various fields of a cell as previously discussed and thus, does not add any new information beyond that which has been addressed above. Thus, in view of the above, Applicants respectfully submit that Pelissier does not teach each and every feature of independent claim 1 as is required under 35 U.S.C. § 102(e).

Similar distinctions apply to the other rejected independent claims 11, 15 and 25. Each of these claims recite obtaining current configuration information for a set of components of a network computing system in response to a power cycle, comparing the current configuration information to stored configuration information for the set of components, and updating the stored configuration information if a difference is present in the comparison. As set forth above Pelissier does not teach these features.

Regarding independent claims 8, 22 and 26, Pelissier does not teach determining whether a component was previously in a location, configuring the component using previously stored configuration information for the component if the component was previously in the location, or configuring the component without previously stored configuration information if the component was not previously in the location. While Pelissier permits network discover in an unconfigured or partially configured network, there is no teaching or suggestion in Pelisser regarding any determination as to whether a particular component was at a location in the network previously and, depending upon the results of the determination, either configuring the component with previously stored configuration information or not, as recited in claims 8, 22 and 26. To the contrary, the network discovery described in Pelissier merely sends out management cells which compile a list of port numbers in their arrays to thereby discover the network topology. The devices may then be configured by assigning a MAC address and a forwarding database to the device. This configuration does not include any determination as to

whether the device was previously at this location or not and if so, using previously stored configuration information.

With regard to independent claims 9, 23 and 27, Pelissier does not teach determining if there is stored configuration information present in a component, determining whether changes to a configuration of the component are present, and if so, updating the changes to the stored configuration information in the component. As discussed at length above, Pelissier merely teaches the sending of management cells through a directed path to thereby compile lists of port numbers from switches corresponding to the path taken by the management cell. Pelissier teaches assigning MAC addresses to devices and providing the devices with forwarding databases based on the topology determined using the management cells, but says nothing regarding determining if a component has configuration information, determining if the configuration of a component has changed, or updating configuration information in a component if the configuration of the component has changed.

Thus, in view of the above, Applicants respectfully submit that Pelissier does not teach each and every feature of independent claims 1, 8, 9, 11, 15, 22, 23, 25 26 and 27 as is required under 35 U.S.C. § 102(e). At least by virtue of their dependency on claims 1, 9, 11, 15 and 23, respectively, Pelissier does not teach each and every feature of dependent claims 2-7, 10, 12-14, 16-21 or 24. Accordingly, Applicants respectfully request withdrawal of the rejection of claims 1-10 and 15-27 under 35 U.S.C. § 102(e).

IV. 35 U.S.C. § 103, Alleged Obviousness

The Office Action rejects claims 11-14 under 35 U.S.C. § 103(a) as being unpatentable over Shah et al. (U.S. Patent No. 6,694,361) in view of Pelissier et al. This rejection is respectfully traversed.

As to independent claim 11, the Office Action states:

> **Referring to claim 11,**
> The reference Shah teaches a bus system; a channel adapter unit connected to a system area network fabric; a memory connected to the bus system, wherein the memory includes as set of instructions; and a processing unit

> connected to the bus system (Fig. 4). The reference fails to explicitly teach the processing unit executes the set of instructions to store the configuration information for the set of components in the network computing system to form stored configuration information; obtain current configuration information from the set of components responsive to a power cycle; compare the current configuration information with the stored configuration information to form a comparison; and update the stored configuration information if a difference is present in the comparison. The reference Pelissier teaches this system by teaching central network manager and its functions. (Fig. 1, col. 2, lines 43-67 and col.3, lines 1-8 and lines 55-67, col. 4, lines 1-44, Fig. 4, lines 46-67 and col. 9, lines 1-58). Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention was made to combine Shah with Pelissier such that the system is made applicable to various type of computer networks such as LAN, CAN, MAN, GAN, SAN and many more as indicated by Shah in col. 2, lines 31-55.

Office Action dated March 17, 2004, pages 8-9.

The Pelissier reference, and its application to the features of claim 11 have been discussed above. Shah does not provide for the deficiencies in Pelissier as noted above. That is, like Pelissier, Shah fails to teach obtaining current configuration information from a set of components in a network computing system in response to a power cycle, comparing the current configuration information to stored configuration information for the set of components, or updating the stored configuration information if a difference is present in the comparison.

Shah teaches a methodology for assigning multiple local identifiers (LIDs) to ports in a cluster. With the method of Shah, a subnet manager performs a topology discovery of the cluster and detects ports associated with the fabric. The subnet manager then computes a minimal spanning tree for the cluster which connects every port to every other port through a single path. The subnet manager then assigns a single base LID to each port and programs the assigned LIDs into forwarding tables in the fabric. Additional LIDs are reserved for each port while the single base LID is assigned to each port such that the fabric is functional and connected when the subnet manager is performing a path analysis of the cluster.

Shah teaches work queues formed in pairs including send queues and receive queues which are located in channel adapters of a host system (column 3, lines 29-47 and column 6, lines 22-43). Shah also teaches a subnet manager that assigns unique addresses to all channel adapter ports. Shah further teaches a partition manager as part of the subnet manager that assigns partition keys to the fabric agents (column 7, lines 23-42). However, nowhere in Shah is there any teaching or suggestion regarding obtaining current configuration information from a set of components in a network computing system in response to a power cycle, comparing the current configuration information to stored configuration information for the set of components, or updating the stored configuration information if a difference is present in the comparison. The Office Action erroneously relies upon Pelissier to provide these teachings which it does not, as discussed above.

Thus, even if Shah were combinable with Pelissier as alleged by the Office Action, the result still would not be the invention as recited in claim 11 since neither reference teaches or suggests obtaining current configuration information from a set of components in a network computing system in response to a power cycle, comparing the current configuration information to stored configuration information for the set of components, or updating the stored configuration information if a difference is present in the comparison. Since neither reference teaches these features, any alleged combination of the references still would not teach these features. Therefore, the invention as recited in claim 11 is not obvious in view of the alleged combination of Pelissier and Shah.

In view of the above, Applicants respectfully submit that Pelissier and Shah, whether taken alone or in combination, do not teach or suggest the features recited in independent claim 11. At least by virtue of their dependency on claim 11, neither Pelissier nor Shah, either alone or in combination, teach or suggest the features of dependent claims 12-14. Accordingly, Applicants respectfully request withdrawal of the rejection of claims 11-14 under 35 U.S.C. § 103(a).

V. Conclusion

It is respectfully urged that the subject application is patentable over Pelissier and Shah and is now in condition for allowance. The Examiner is invited to call the undersigned at the below-listed telephone number if in the opinion of the Examiner such a telephone conference would expedite or aid the prosecution and examination of this application.

Respectfully submitted,

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